The Danish microbiology database

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Marianne Voldstedlund,
Dept. of Infectious Disease Epidemiology,
Statens Serum Institut,
Copenhagen, Denmark

OVERVIEW

- The visions
- The basic principles of MiBa
- Datamodel and coding
- Perspectives for use of SNOMED CT in MiBa

Marianne Voldstedlund, Department of Infectious Disease
Epidemiology, Statens Serum Institute, Copenhagen, Denmark

THE PRIMARY VISIONS FOR MIBA

- Nationwide sharing of patient reports on microbiological test results.

- A new national surveillance system for infectious diseases and microorganisms:
  - automatic, flexible and real time.

- A database for research and quality assessment projects.

MIBA IS A COLLABORATION BETWEEN

- **All Danish Microbiology Departments**
- **Suppliers of Laboratory information systems**
  - Autonik AB
  - MADS
- Statens Serum Institut
  - Microbiology and Infection Control
  - Virology Surveillance and Research
  - **Department of Infectious Disease Epidemiology**
  - National Sundheds IT (NSI)
- MedCom
- The Ministry of Health

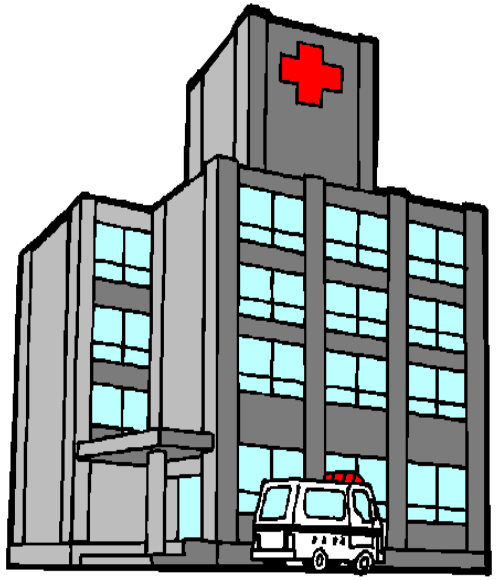
BASIC PRINCIPLES OF MIBA

Department of clinical microbiology

SDN

Test report

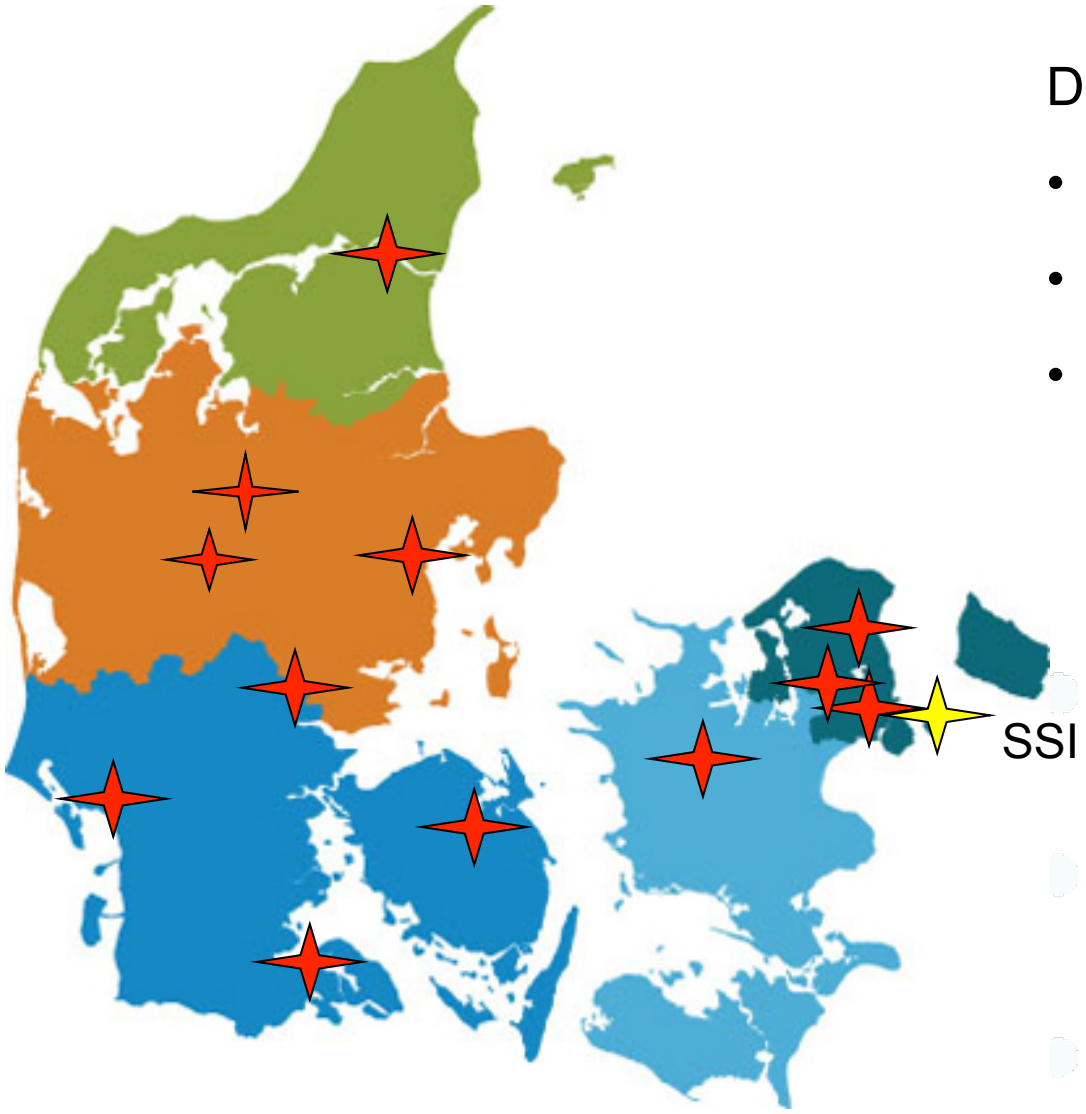
Copy of test report



SDN = The Danish heath care net work

Marianne Voldstedlund, Department of Infectious Disease Epidemiology, Statens Serum Institute, Copenhagen, Denmark

DEPARTMENTS OF CLINICAL MICROBIOLOGY IN DENMARK



Different

- IT-systems
- data structure
- coding

Statens Serum Institut
(The National Public Health Institute)

Regions formed in 2007

ACCES TO MICROBIOLOGICAL TEST REPORTS

Before MiBa

- No sharing of test reports between hospitals or GPs

After MiBa

- Nationwide acces to all test reports

LOOK UPS (OF INDIVIDUAL PATIENTS) IN MIBA PER MONTH

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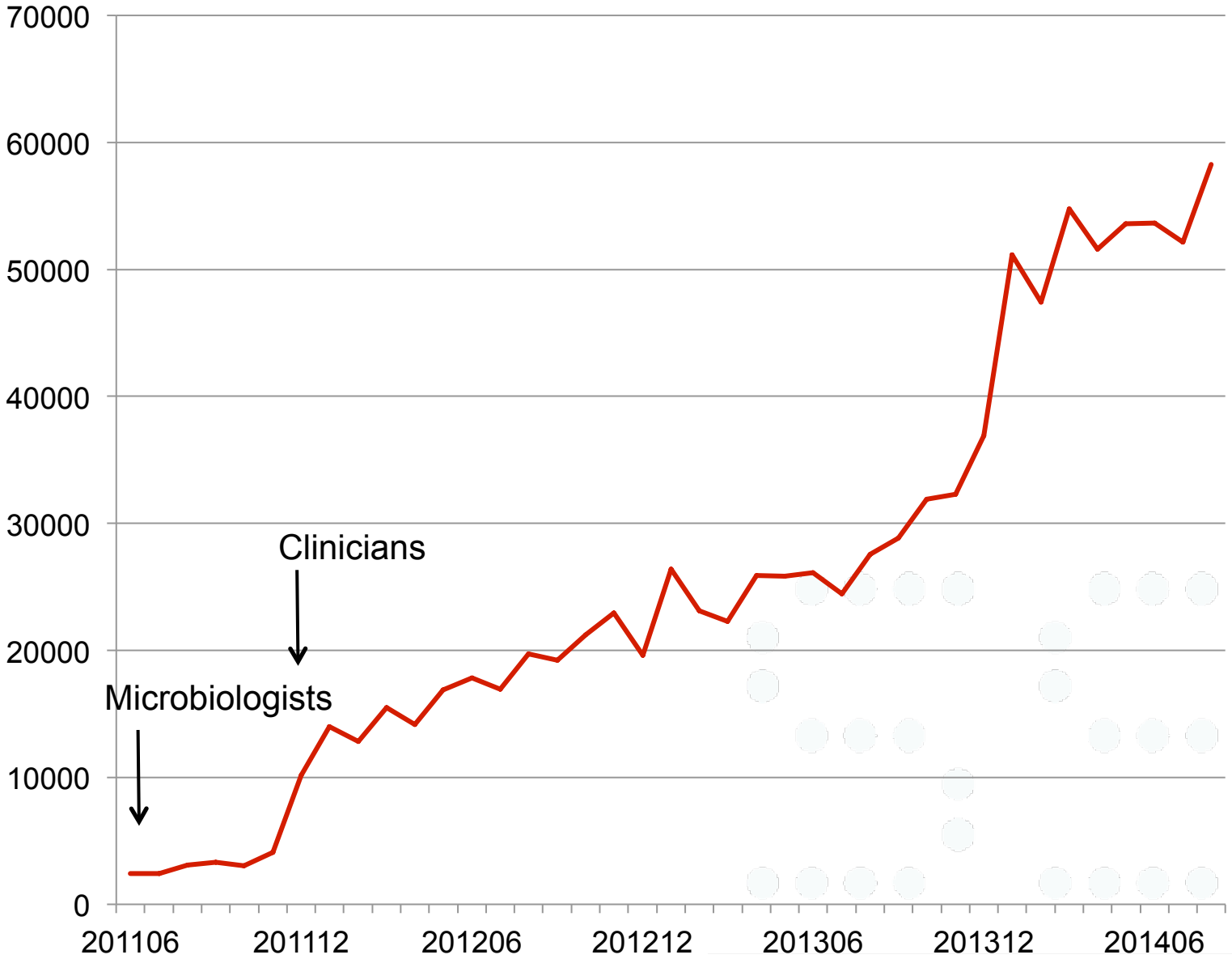

NATION WIDE ACCES TO

ALL TEST REPORTS

In MiBa:

14 millions records

accumulated from Jan 2010 - Oct 2014

The Danish population: 5,5 million

NATIONAL SURVEILLANCE

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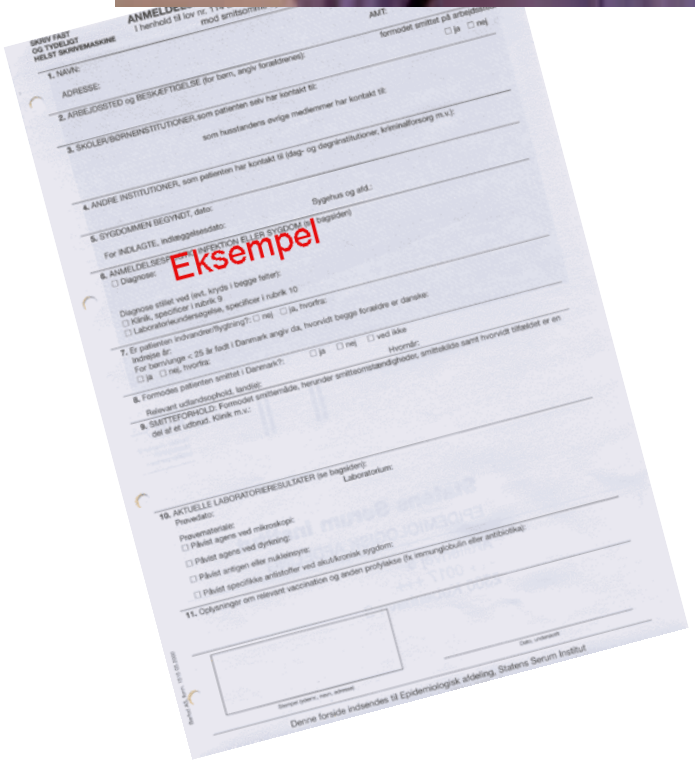
NATIONAL SURVEILLANCE AS IS – (BEFORE MIBA)



Based on manual workflows

NATIONAL SURVEILLANCE - BASED ON MIBA

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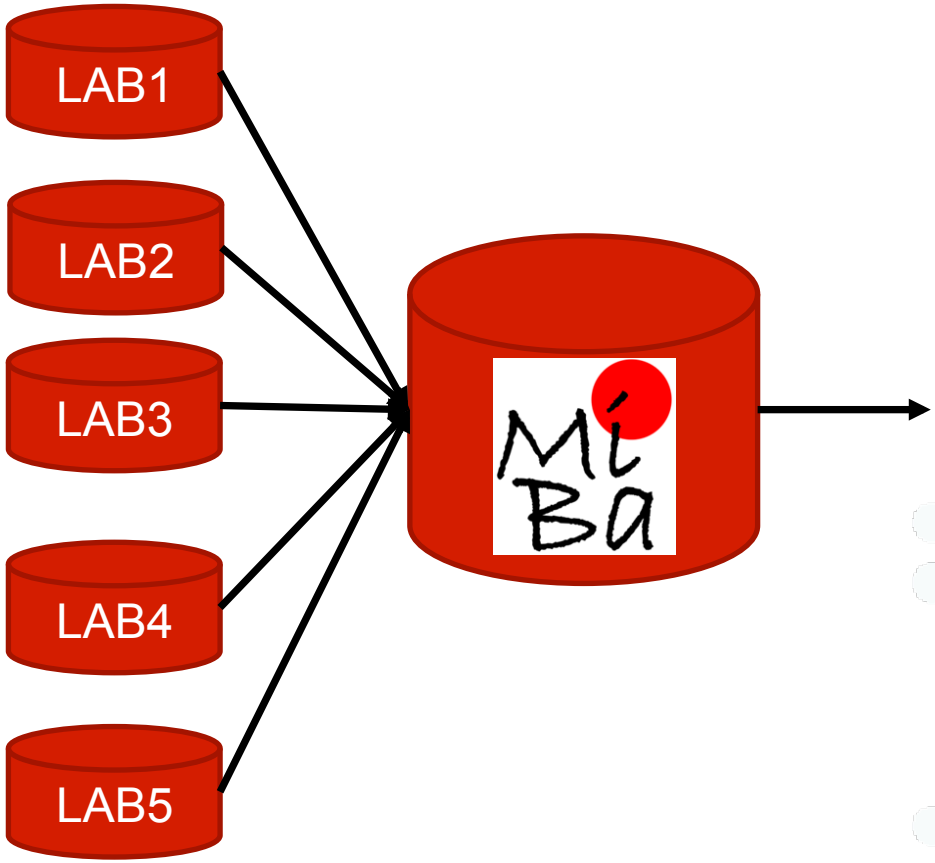
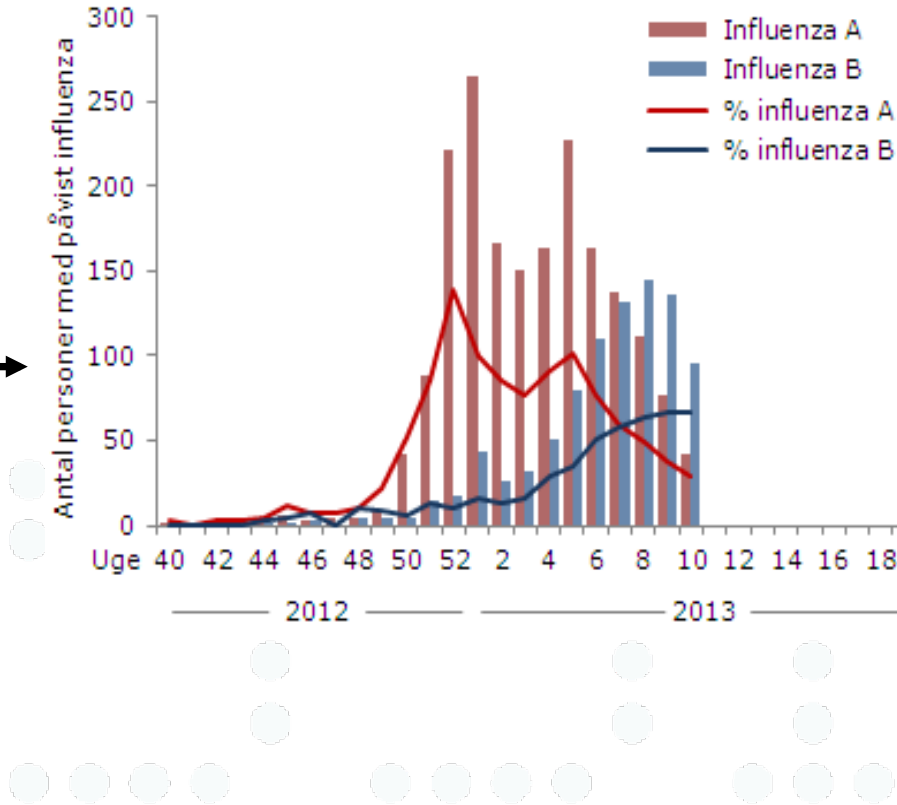
Automatic real time data transfer and analysis



Lab confimed infuenza



WHAT IS SPECIAL ABOUT MIBA DATA??

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- Complete data at a national level
- Real time data
- Both positive and negative test results
- All data are personalised (contain the unique CPR number)
- Can be linked to other public registries
- No extra burdens of reporting for the laboratories or health care workers

HOW DIFFICULT CAN THIS BE……..

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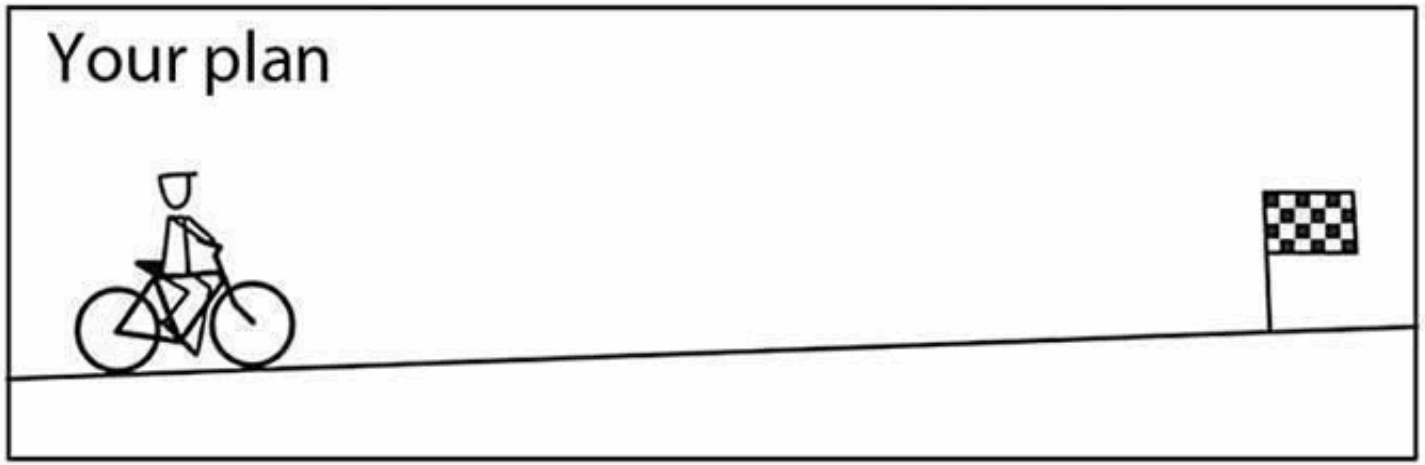

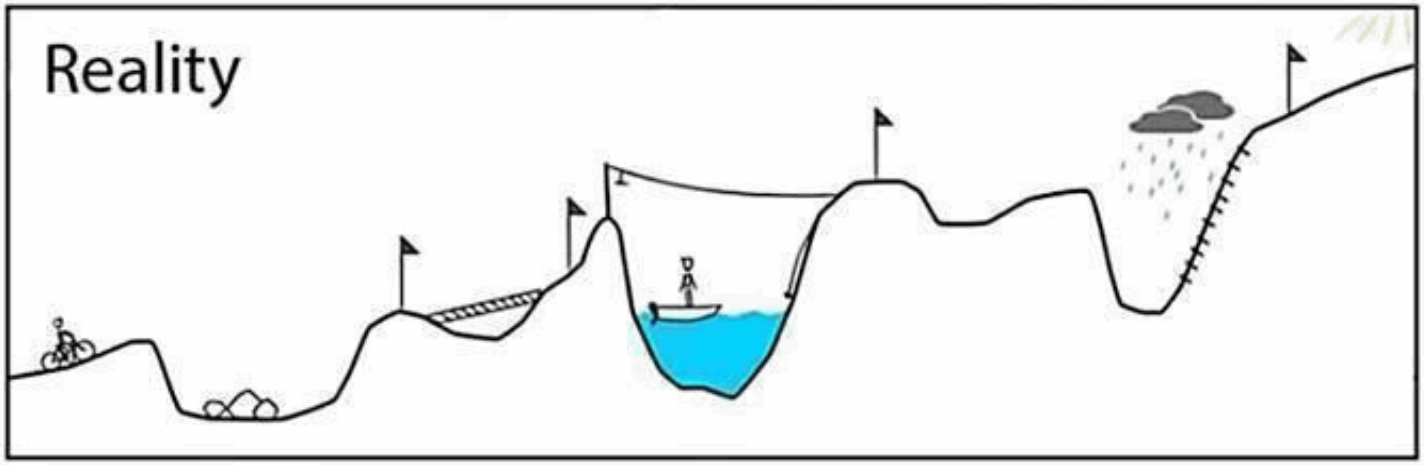

DATA TRANSFER

STANDARD XML TRANSFER PROTOCOL
(MEDCOM XRPT05)

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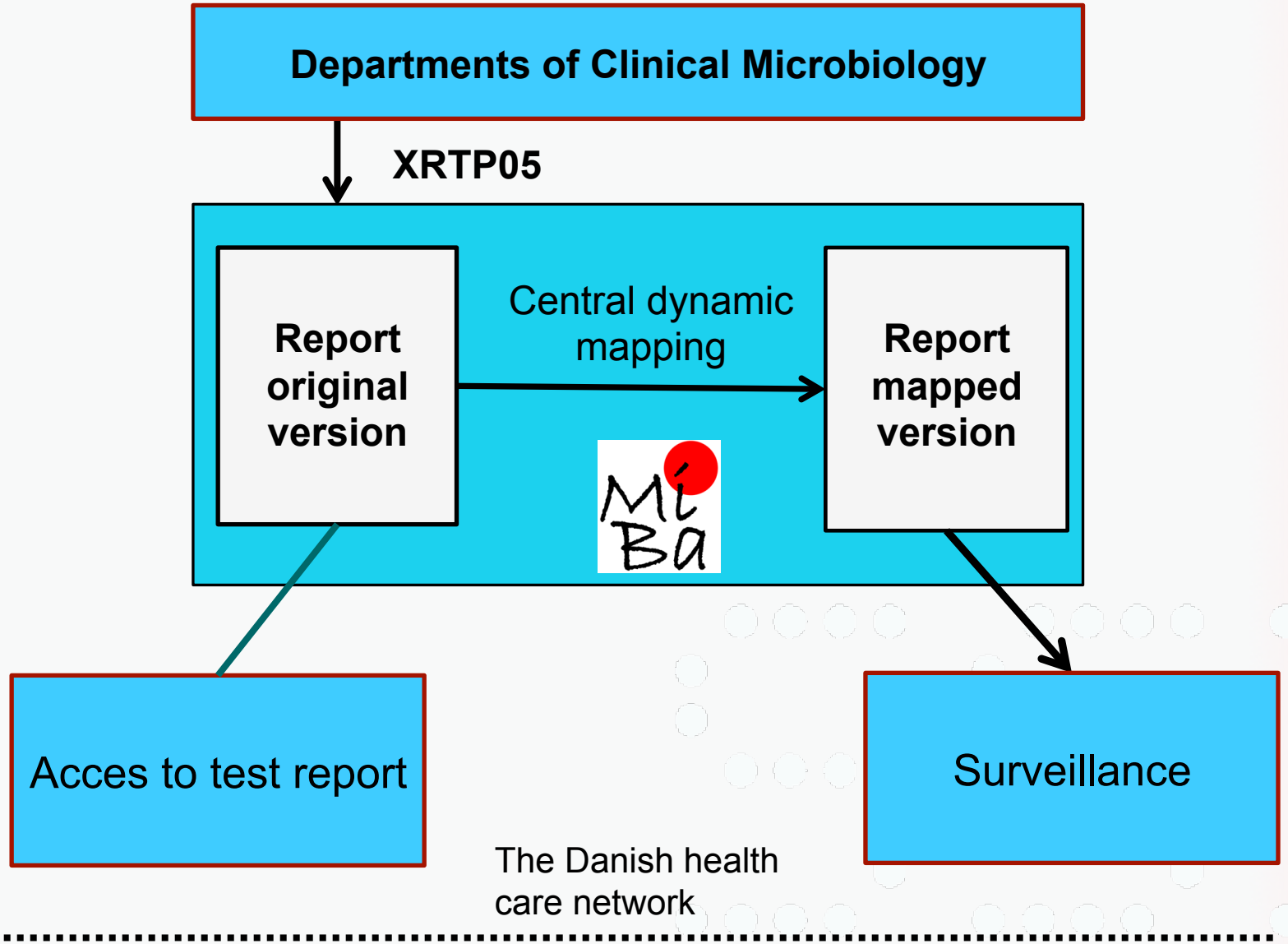
Epidemiology, Statens Serum Institute, Copenhagen, Denmark

DATA MODEL


Departments of Clinical Microbiology
XRTP05
Report original version
Central dynamic mapping
Report mapped version
MiBa
Acces to test report
Surveillance
The Danish health care network

MAIN VARIABLES IN MIBA TEST REPORTS

Administrative data

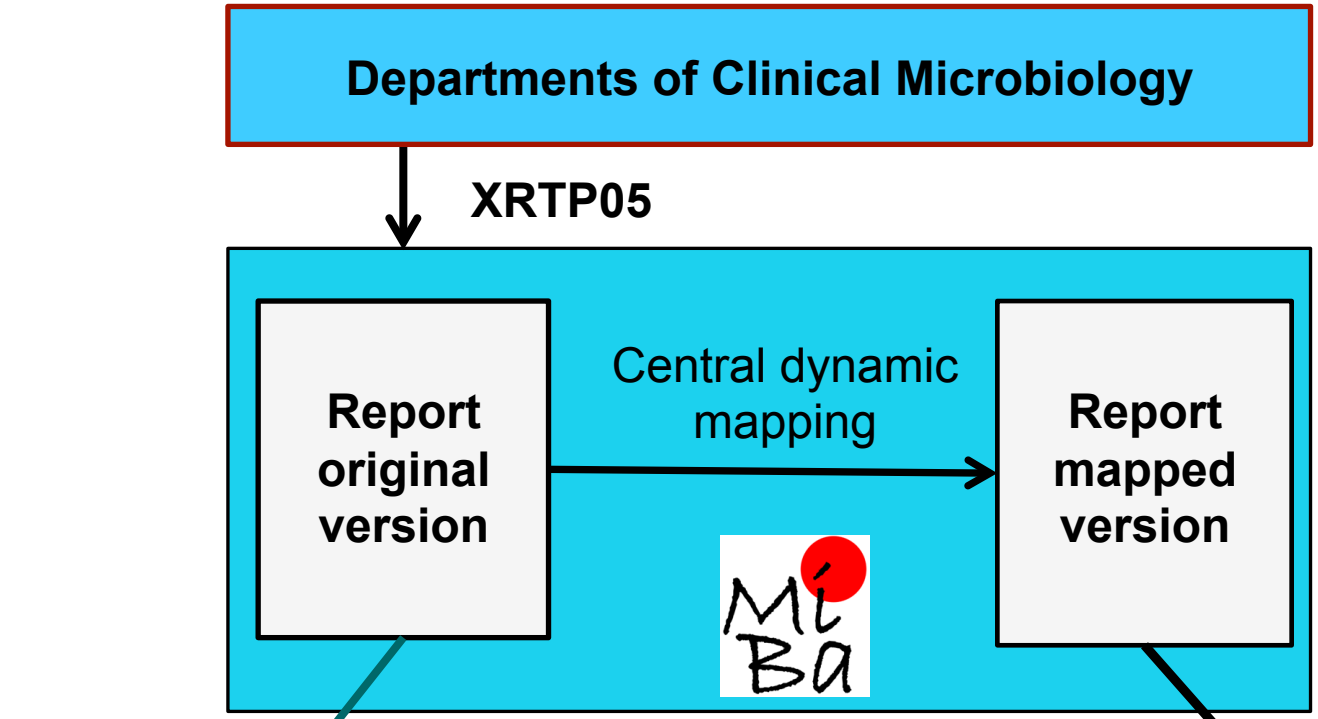
- **Patient identification / CPR-number**
- **Sample IDs**
- **Various dates**
- **Requestor (hospital department or GP) (code)***
- **Laboratory that performed the test (code)***
- **The kind of test ordered (code)***
- **Material examined (code)***
- **Anatomical location of (code)***
- **Clinical information (text)**

* National codes

Results / findings

- **Microorganism (findings) (local code)**
- **Antimicrobial resistance pattern (local code)**
- **Test performed (analyses) (local code)**
- **Result / interpretation of test (local code)**
- **Final evaluation or comment (text)**

DATA MODEL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Microorganism (findings) (local code)

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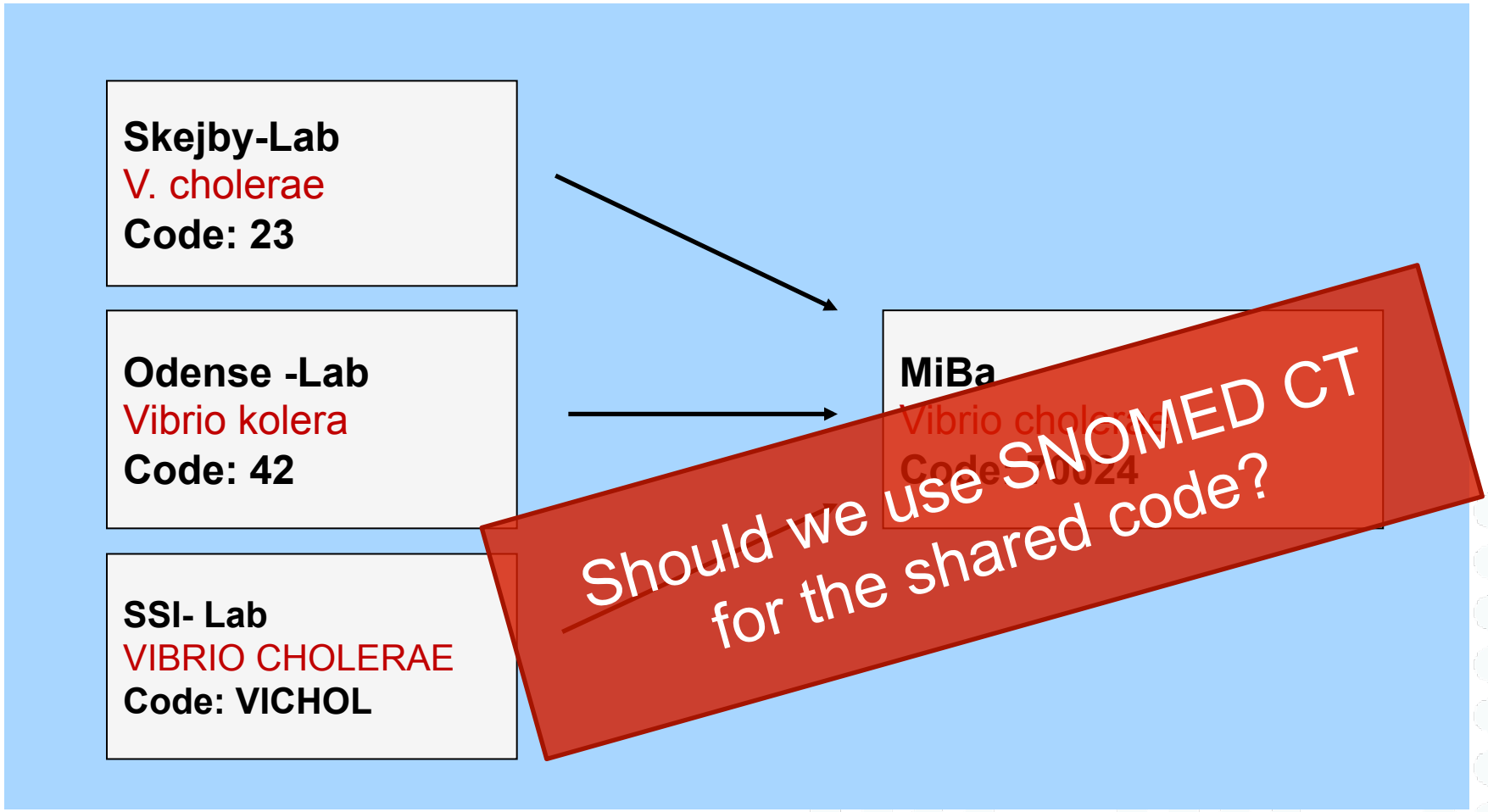
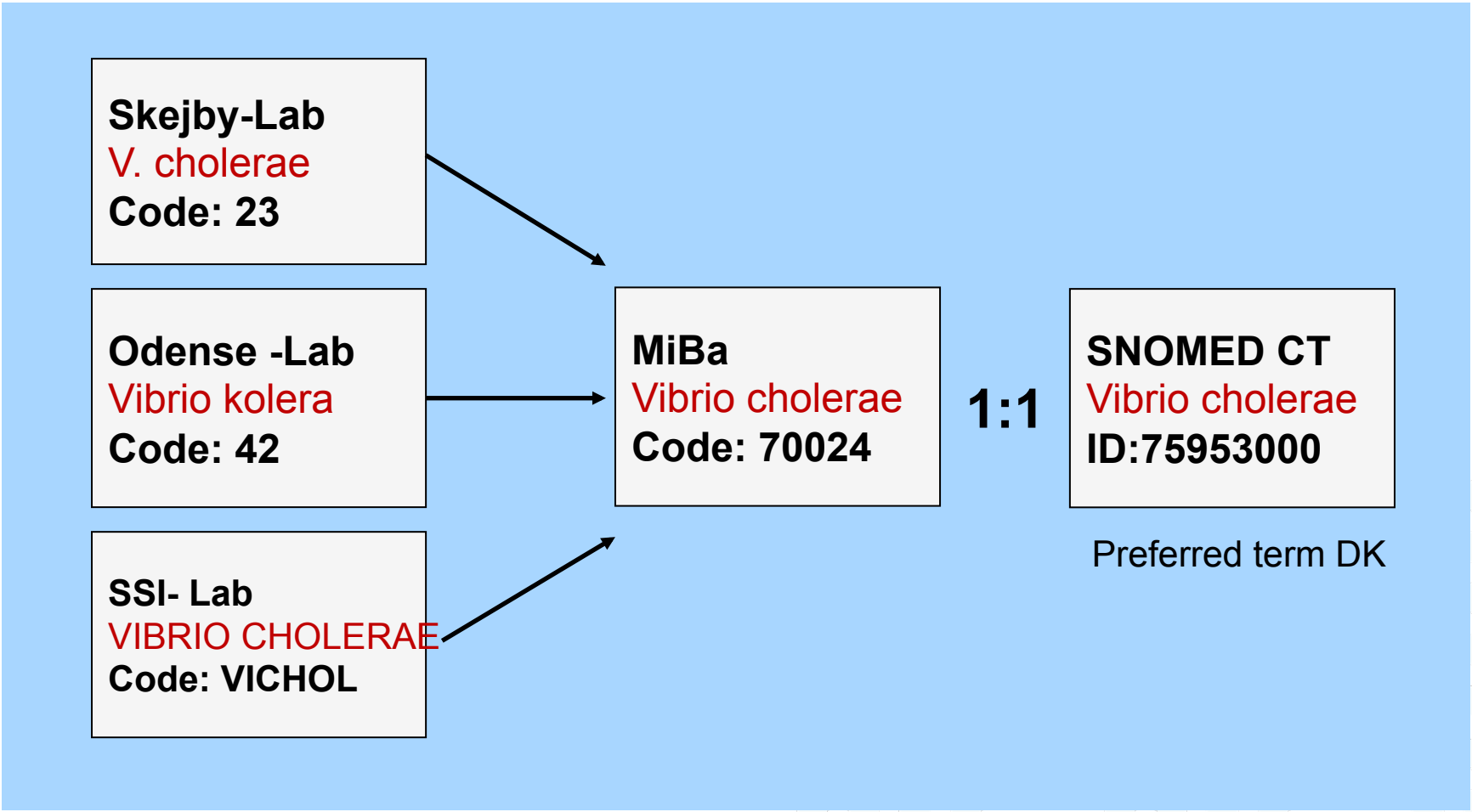
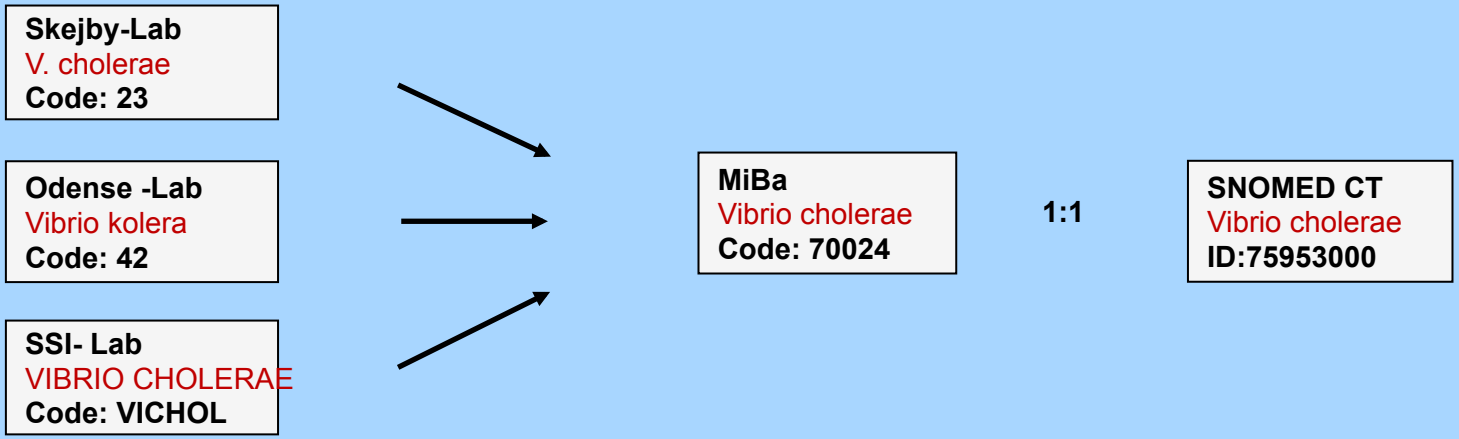
CENTRAL DYNAMIC MAPNING



Same term for MiBa and SNOMED CT (preferred term)



MAPPING IN PROGRESS



7700 local terms accumulated in MiBa

6650 terms evaluated and mapped to a shared term

Some terms do not belong to this klassification

1160 shared terms or concepts created in the MiBa classification

790 terms mapped to SNOMED CT® Microorganism.

SNOMED CT® MICROORGANISM

1:1 mapping

- semi automatically and manually using a browser

- 792 MiBa mapped 1:1 to SNOMED CT
- Definitions of “Genus” >< “ X species”
- 35 new SNOMED CT concepts

- Unresolved issues:
  - Microbial properties (subtypes, genes, toxins)

INCONSISTENCY ISSUES

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- Genus Enterobacter (organism)
  - Enterobacter species – synonym to Genus

- Genus Salmonella
  - Salmonella species – child of Genus

Ongoing discussion in the IHTSDO community what x-species mean.
X species have been modelled in two different ways:
- ✗ As a synonym to Genus X
- ❑ As a child of Genus X

CONCLUSIONS AND PERSPECTIVES

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- The clinically important preferred terms of the microorganism sub- hierarchy in SNOMED CT have been evaluated by Danish experts in microbial taxonomy

- The microorganism sub-hierarchy was found
  - valid and up-to-date
  - suitable for implementation in MiBa as a national terminology

- A few concept's were missing (now created in the Danish extension)

- The concept of X species needed clarification

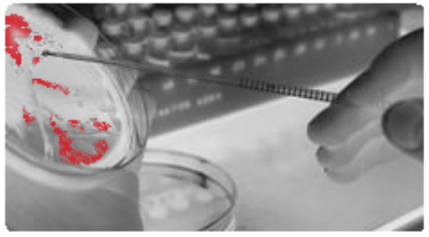
- Technical aspects of a SNOMED CT implementation will now be considered

- Other MiBa classifications will be considered for SNOMED CT mapping

refox
Historik Bogmærker Funktioner Hjælp
.dk
Ask.com

Den danske mikrobiologidatabase

Adgang
Læs hvordan du får adgang



Kommende møder
Få overblik over kommende møder

Arbejdsgrupper
Læs om MiBa's arbejdsgrupper

Genveje

- HAIBA
- MiBa II
- Prøvesvar fra SSI til Laboratorieportalen
- Tekniske problemer med SSI-svar

Den danske mikrobiologidatabase (MiBa) Statens Serum Institut Artillerivej 5, 2300 Kbh S Tlf.: 3268 3038 @: miba@ssi.dk

Søg på pc'en

END